Oenothera. He gives the telosynaptic account, involving the segmentation of the thick spirem (pachynema) into a single chain of chromosomes. No new facts regarding reduction are brought out, and there are no deviations from the history of reduction as already known for *O. Lamarckiana* and its mutants. The reviewer, in a paper before the Botanical Society of America in 1908,[29] showed that the process of reduction in the mutating forms can be duplicated by figures of every stage in *O. biennis* and *O. laevifolia*, there being the same tendency not to form close pairs, and the same loose arrangement of the chromosomes on the heterotypic spindle. This permits of occasional irregularities in the distribution of the chromosomes during reduction, and these were found to occur in normal material of *O. biennis*, as in the mutating forms. Thus no differences in the method of reduction in the different species and races of *Oenothera* have yet been found, except in *O. grandiflora*, in which DAVIS[30] obtains what he thinks are rings, in the place of loose heterotypic bivalents. As the reviewer has already pointed out,[31] the supposed rings are probably due to a greater attraction between homologous chromosomes in *O. grandiflora* than in the other forms.—R. R. GATES.

Florida peat deposits.—This report[32] is the result of a general survey of peat formations and distribution in Florida, without detailed examination or studies. Immature topography affords the most favorable surface water conditions for deposit of peat if associated with proper climate, not too dry nor too cold, as in glaciated areas of eastern North America and of Europe, and in the Coastal Plain of the southeastern United States. Florida seems to offer ideal conditions, having a greater variety of swamps, bogs, marshes, and places where peat accumulates than any equal area in North America, and also an ample rainfall. A tentative classification of the peat is based on the nature of the water with which it was found associated: salty, muddy, calcareous, swamp waters, with several exceptional deposits. The best and deepest peat is that in the peat prairies classed as "filled lakes"; under the same division is included the northern everglades. Analyses of 53 samples indicate a good average quality, the fuel value being above the average for pressed peat (8500 B.T.U.; DAVIS) for two-thirds of the samples. The list of peat plants includes 83 families of angiosperms, 6 conifers, *Isoetes*, 2 lycopodiums, *Azolla* sp., 11 ferns, several mosses, and *Chara*.—LAURA GANO.

Sporangia of Weichselia.—This is a cretaceous genus of fernlike plants known heretofore only from the bipinnate sterile fronds. The question has

[29] GATES, R. R., Further studies of oenotheran cytology. Science N.S. **29**:269. 1909.

[30] DAVIS, B. M., Pollen development of *Oenothera grandiflora*. Annals of Botany **23**:551–571. *pls. 41, 42*. 1909.

[31] BOT. GAZETTE **49**:64–66. 1910.

[32] HARPER, ROLAND M., Preliminary report on the peat deposits of Florida. Included in third Ann. Rep. Fla. State Geol. Survey. 1910.

been raised whether it is not a belated member of the Cycadofilicales, and therefore any further information concerning it is desirable. BOMMER[33] has obtained material that supplies additional information, which he publishes in a preliminary announcement. The vascular structure of the plant suggests to him possible relationship with the Matoniaceae, but the sporangia, now found attached, are of special interest. They occur in synangia which resemble inverted cones, and possess an incomplete annulus, as in *Matonia*. Each synangium includes 10–15 sporangia, and the synangia themselves are grouped so as to form spherical bodies 3–4 mm. in diameter. These synangial groups are borne thickly on apparently naked branches of the frond. Such fructifications have been found heretofore detached. BOMMER is evidently undecided whether the most obvious testimony at present should decide for *Matonia* affinities; or whether certain vague suggestions should decide for a *Marattia* connection; or whether, after all, these synangia may not be the microsporangia of Cycadofilicales. This lack of decision is commendable.—J. M. C.

A classification of plants.—Professor BESSEY has long been interested in a general classification of plants which is quite a departure, in many respects, from current schemes. In 1909 he published in outline his ripened conclusions, together with the principles involved, and now he has furnished a key[34] by which the groupings are defined, so far as a key can define. It is impossible to give an account of the views expressed without reprinting the paper, for it is in itself the shortest possible statement. It is sufficient to say that the 4 conventional main groups are dissipated into 14 "phyla," whose technical and common names may serve to indicate them: Myxophyceae (slime algae), Protophyceae (simple algae), Zygophyceae (conjugate algae), Siphonophyceae (tube algae), Phaeophyceae (brown algae), Carpophyceae (higher algae), Carpomyceteae (higher fungi), Bryophyta (mossworts), Pteridophyta (ferns), Calamophyta (calamites), Lepidophyta (lycopods), Cycadophyta (cycads), Strobilophyta (conifers), Anthophyta (flowering plants). These phyla are broken up into 32 classes and 94 orders, not including the dicotyledons, which constitute class 33, with 5 "super-orders," the list of orders not being given.—J. M. C.

Seeds of the Conostoma group.—OLIVER and SALISBURY[35] have assembled the material of *Conostoma* for investigation, and have compared it with *Lagenostoma*, *Physostoma*, and *Gnetopsis*. A full description is given of *C. oblongum* and *C. anglo-germanicum*, and this is followed by a comparison with related

[33] BOMMER, CH., Contribution à l'étude du genre *Weichselia*. Note préliminaire. Bull. Soc. Roy. Bot. Belgique **47**: 296–304. *figs. 18.* 1911.

[34] BESSEY, CHARLES E., The phyla, classes, and orders of plants. Trans. Amer. Micr. Soc. **29**: 85–96. 1910.

[35] OLIVER, F. W., and SALISBURY, E. J., On the structure and affinities of the paleozoic seeds of the *Conostoma* group. Annals of Botany **25**: 1–50. *pls. 1–3. figs. 13.* 1911.